

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 January 2003 (30.01.2003)

PCT

(10) International Publication Number
WO 03/009113 A1

(51) International Patent Classification?: **G06F 1/00,**
G06C 9/00

[SE/SE]; Hantverkargatan 59, S-112 31 Stockholm (SE).
FLINK, Sören [SE/SE]; Skjolvägen 17, S-120 48 Enskede
Gård (SE).

(21) International Application Number: **PCT/SE02/01367**

(22) International Filing Date: **16 July 2002 (16.07.2002)**

(74) Agents: **SUNDSTRÖM, Per et al.**; Stenhagen Patentbyrå
AB, P.O.Box 4630, S-116 91 Stockholm (SE).

(25) Filing Language: **Swedish**

(26) Publication Language: **English**

(30) Priority Data:
0102558-4 **18 July 2001 (18.07.2001)** **SE**

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): **DIREKT-
GIRO AB** [SE/SE]; P.O. Box 5004, S-121 05 Johanneshov
(SE).

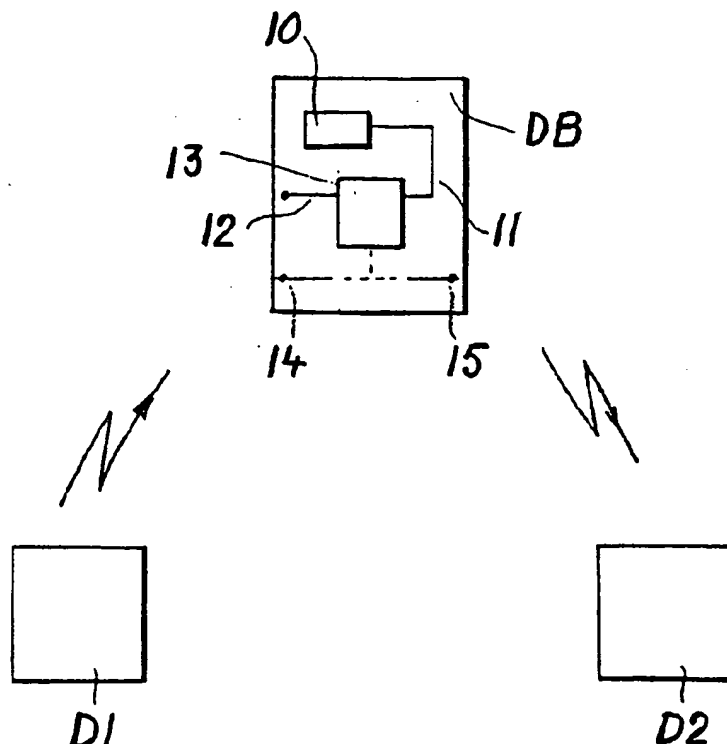
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **BENGTTSSON, Bo**

[Continued on next page]

(54) Title: A METHOD FOR SAFE AND FAST CONNECTION OF A FIRST COMPUTER TO A SECOND COMPUTER HAVING LIMITED ACCESS ABILITY



(57) Abstract: A method for safe and fast connection of a first computer (D1) to a second computer (D2) that has limited access ability involves reading into the first computer (D1) a register-data, which is sent to a databank (DB) that includes a register (10) which includes plurality of fingerprints; reading into the first computer (D1) a fingerprint (12) of a valid user, said fingerprint (12) also being sent to the databank (DB); carrying out in the databank (DB) a comparison between a fingerprint (11) included in said plurality of fingerprints (10) and corresponding to the earlier transmitted register-data on the one hand, and the fingerprint (12) earlier sent by the valid user on the other hand; and connecting the first computer to the second computer (D2) automatically (via 14, 15) when agreement is found between the two fingerprints (11, 12).

WO 03/009113 A1



ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN,

IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A METHOD FOR SAFE AND FAST CONNECTION OF A FIRST COMPUTER TO A SECOND COMPUTER HAVING LIMITED ACCESS ABILITY

TECHNICAL FIELD

5

The transmission or exchange of information between computers can be effected *per se* relatively quickly and simply with the aid of present-day computer technology. However, the demand for security, simplicity and speed increases with time.

10 For example, a company may wish to contact a branch office in another part of the world whilst avoiding industrial espionage; a physician who needs to read remotely situated case records of a patient will, naturally, do this without an unauthorised person having access to the records at the same time; banks desire to execute their services without danger of currency fraud, which are, unfortunately, ever more usual at the present time. Examples of
15 other situations may include the desire of a salesman to register an order, or the need of a company accountant to check an item in someone's accounts. The use options are many, and computers are now being equipped with fingerprint readers as standard to an ever increasing extent.

20 SUMMARY OF THE INVENTION

The object of the present invention is to provide absolute secure control over what is allowed through to a computer, a database, both quickly and simply without the user needing to learn new codes.

25

The method of safe and quick connection of a first computer to a second computer having a limited access ability involves reading into the first computer a register-data that is sent to a data bank which includes a plurality of fingerprints, reading into the first computer the fingerprint of a valid user, this fingerprint also being sent to the databank; causing a
30 comparison to be made in the databank between a fingerprint included in said plurality of fingerprints and corresponding to the earlier sent register-data on the one hand and the earlier sent fingerprint of the valid user on the other hand; and connecting the first computer automatically to the second computer when agreement is found between the two fingerprints.

DESCRIPTION OF A PREFERRED EMBODIMENT

The invention will now be described in more detail with reference to the accompanying drawing, which illustrates schematically a coupling between two computers.

5

It is desired to connect a computer D1 to a computer D2, which, for some reason, has a limited access ability. This may be because the computer D2 is intended solely for a physician or doctor.

10 Register-data is read into the first computer D1 from a chip or some other electronic storage medium, this data being sent, e.g., via the Internet, to a databank DB that includes a register 10 in which a plurality of fingerprints are stored.

Fingerprints 12 belonging to a valid user (a doctor) are read into the first computer D1 and
15 sent to the databank DB, via the Internet.

It may be appropriate to allow both transmissions between the first computer D1 and the databank DB to take place in an encrypted form.

20 A comparison is made in a comparison circuit 13 in the databank DB between fingerprints 11 included in said plurality of fingerprints 10 and corresponding to the earlier transmitted register-data on the one hand, and the earlier transmitted fingerprint 12 of the valid user (the doctor) on the other hand. The computer D1 and the computer D2 are coupled automatically when agreement is found between the two fingerprints 11 and 12, via points
25 14 and 15, possibly in an encrypted form for encrypted transmission between the two computers.

The connection desired is prevented from taking place when there is lack of agreement between the fingerprints 11 and the fingerprint 12.

30

The proposed computer coupling security routine has been found extremely easy to use and to provide a positive solution to a number of security problems and is thought to have a future in respect of a large number of practical use possibilities.

CLAIM

A method for safe and fast connection of a first computer (D1) to a second computer (D2) that has limited access ability, characterised

5 by reading into the first computer (D1) a register-data, which is sent to a databank (DB) that includes a register (10) which includes plurality of fingerprints;

reading into the first computer (D1) a fingerprint (12) of a valid user, said fingerprint (12) also being sent to the databank (DB); carrying out in the databank (DB) a comparison

10 between a fingerprint (11) included in said plurality of fingerprints (10) and corresponding to the earlier transmitted register-data on the one hand, and the fingerprint (12) earlier sent by the valid user on the other hand; and

connecting the first computer to the second computer (D2) automatically (via 14, 15) when agreement is found between the two fingerprints (11, 12).

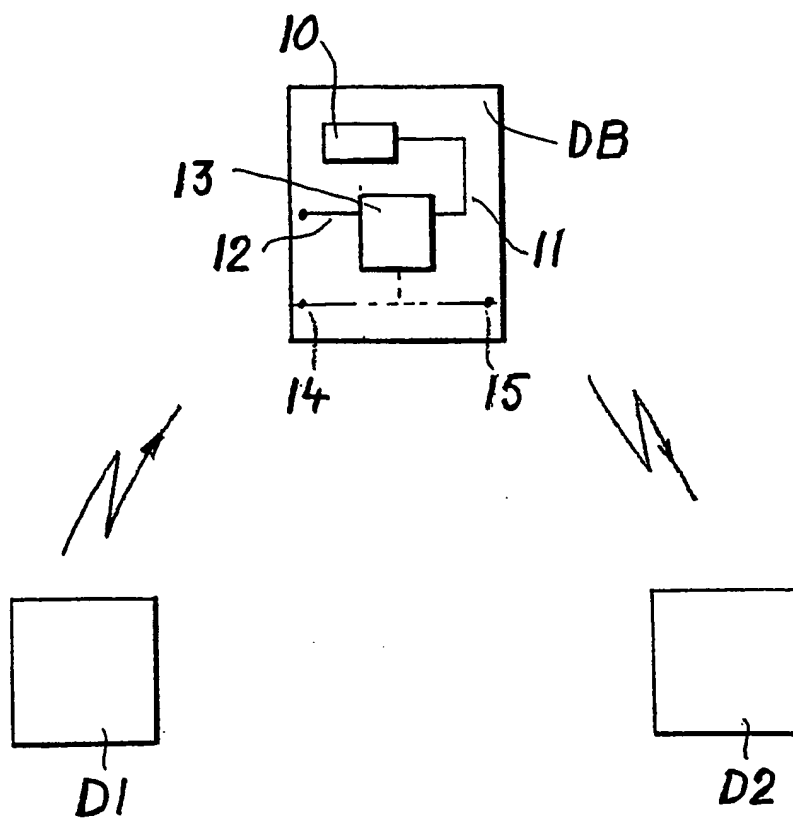


Fig. 1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 02/01367

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 1/00, G06C 9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F, G06C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5386104 A (SIME, I.R.F.), 31 January 1995 (31.01.95), column 4, line 19 - column 5, line 5, abstract --	1
X	WO 9939310 A1 (PHELPS, B.C.), 5 August 1999 (05.08.99), page 6, line 29 - page 7, line 27, claims 1-2, abstract --	1
X	DE 19809006 A1 (HAMESTER, U.), 9 Sept 1999 (09.09.99), claim 1, abstract --	1

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

30 Sept 2002

Date of mailing of the international search report

23 ~~SEP~~ 2002

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Pär Heimdal/LR
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 02/01367

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6256737 B1 (BIANCO, P.G. ET AL.), 3 July 2001 (03.07.01), column 2, line 53 - column 3, line 48, abstract --	1
A	US 5903225 A (SCHMITT, J.C. ET AL.), 11 May 1999 (11.05.99), abstract -- -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/09/02

International application No.

PCT/SE 02/01367

Patent document cited in search report				Publication date		Patent family member(s)		Publication date	
US	5386104	A	31/01/95	DE	69425944	D,T	12/04/01		
				EP	0652540	A,B	10/05/95		
				ES	2150474	T	01/12/00		
				GB	9323489	D	00/00/00		
				JP	7192164	A	28/07/95		

WO	9939310	A1	05/08/99	AU	2345499	A	16/08/99		
				GB	2340274	A	16/02/00		
				GB	9909897	D	00/00/00		
				JP	3096457	B	10/10/00		
				JP	2000040002	A	08/02/00		
				US	6108712	A	22/08/00		

DE	19809006	A1	09/09/99	NONE					

US	6256737	B1	03/07/01	AU	3512800	A	28/09/00		
				EP	1208522	A	29/05/02		
				WO	0054214	A	14/09/00		

US	5903225	A	11/05/99	NONE					

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.